

USSR

UDC: 519.21

PONOMARENKO, A. I.

"Pseudohomogeneous Random Fields on Groups and Homogeneous Spaces"

Teoriya veroyatnostey i mat. stat. Mezhd. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1971, vyp. 4, pp 117-122 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V232)

Translation: Let Q be a homogeneous space with transitive group of transformations G . A random second-order field $\xi(q)$, $q \in Q$, is called pseudohomogeneous relative to the right-invariant mean value M on some linear space of functions on G if its correlation function $M_{\xi}(p) \xi(pq)$ has a mean value M as a function on G at each and every $p, q \in Q$. Problems in harmonic analysis of such fields are considered in the article. Author's abstract.

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USSR

UDC 519.21

PONOMARENKO, A. I.

"Harmonic Analysis of Generalized Random Fields, Homogeneous in the Broad Sense, in a Commutative, Locally Compact Group"

Teoriya Veroyatnostey i Mat. Statist. Mezhd. Nauch. Sb., [Theory of Probabilities and Mathematical Statistics. Interdepartmental Scientific Collection], 1970, No 3, pp 117-134, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V121 by the author).

Translation: The spectral representations and ergodic theorems are studied for generalized random fields, homogeneous in the broad sense, in a commutative, locally compact group. The linear transforms of these fields are also studied.

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USSR

UDC 669.2:621.746

MOLCHANOV, M. D., BONDAREV, B. I., IVANOV, V. S., KALYAPIN, A. S., PONOMARENKO, A. M., and ANDRONOV, A. N.

"Development and Industrial Application of FL10 Flux"

Tsvetnyye Metally, No 3, Mar 71, pp 70-71

Abstract: FL10 flux contains no compounds which react with such alloying elements as zirconium and the rare earth elements, and therefore can be recommended for processing of all magnesium alloys without limitation. The cost of FL10 is 16 rubles less than the cost of FL5 flux.

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MOLCHANOV, M. D., BONDAREV, B. I., IVANOV, V. S., KALYAPIN, A. S., PONOMARENKO, A. M., and ANDRONOV, A. N.

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AT0032096

NUCLEAR SCI. ABST. 2-70 ^P UR 0000

6510 (NP-tr-1861) EXPERIMENTS WITH STRONG SHOCK-
WAVES ON "VODA I" Kapitonov, V. A.; Korolov, V. A.; Lagu-
nov, V. M.; Nesterikhin, Yu. E.; Papyrin, A. N.; Ponomarenko,
A. G.; Federov, V. Z. (Akademiya Nauk SSSR, Novosibirsk. [In-
stitut Yadernoi Fiziki]). Translated for Culham Lab., Abingdon,
Eng., from Preprint No. 238. 11p. (CTO-658). Dep. CFSTI
(U. S. Sales Only).

Experiments are described on the excitation of strong collision-
less shock waves ($M \geq 5$) with subsequent containment of the
plasma by the magnetic field of the shock loop. A magnetic piston
of ~ 20 kOe was produced within $\sim 100 \times 10^{-9}$ sec by a current
generator forming a long line with water insulation for 250 keV
and wave impedance of 1Ω . (auth)

19700282

172 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NEW BINDER FOR GUNITE TYPE CONCRETING -U-

AUTHOR--(05)-BAKLANDV, G.M., KAZAKEVICH, E.V., PONOMARENKO, D.I., LADYGIN,
F.F., KRIPITSER, A.M.
COUNTRY OF INFO--USSR

SOURCE--STROIT. MATER. 1970, (3), 26-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CEMENT, -BLAST FURNACE SLAG, GYPSUM, CONSTRUCTION MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1650

STEP NO--UR/0228/70/000/003/0026/0027

CIRC ACCESSION NO--AP0112644

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112644

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FAST SETTING AND FAST HARDENING CEMENT WAS DEVELOPED FOR GUNITE TYPE CONCRETING, SO CALLED SPATTER CEMENT. IT CONSISTED OF CLINKER WITH DEGREE OF CAO SATN. EQUALS 0.83-0.87 DCNTG. 3CAO.AL SUB2 O SUB3 4.5-8, 3CAO.SIO SUB2 47-55PERCENT, SYNTHETIC SLAG WITH 70PERCENT 12CAO.7AL SUB2 O SUB3, GRANUALTED BLAST FURNACE SLAG AND GYPSUM. THE BLAST FURNACE SLAG REDUCED THE COST AND INCREASED ITS RESISTANCE IN CORROSIVE MEDIA. AT A WATER-CEMENT RATIO OF 0.4 A SETTING DURATION OF 1-10 MIN WAS OBSO. IN THE 1ST 2 HK A STRENGTH OF 20 KG-CM PRIME2 WAS ATTAINED, AFTER 28 DAYS A COMPRESSIVE STRENGTH OF 250-374 KG-CM PRIME2. IN SUBTERRANEAN CONSTRUCTIONS IN ORE MINES THE SPATTER CEMENT MET ALL THE REQUIREMENTS. IT NEEDS NO SETTING ACCELERATORS, AND THE NO. OF SERVICE PERSONNEL FOR THE PREPN. AND ADDN. OF ADDITIVES CAN BE REDUCED. A CONCRETE COATING OF 20-25 CM CAN BE APPLIED IN 1 STAGE. THE METHOD CAN BE USED NOT ONLY IN MINES, TUNNELS, SUBWAYS BUT OWING TO ITS CHEAPNESS ALSO IN CONSTRUCTION WORK.

UNCLASSIFIED

UDC 51

USSR

MARSHEV, V. I., PONOMARENKO, L. A.

"Classification of Models of the Economy"

V sb. Prom. kibernetika (Industrial Cybernetics — collection of works), Kiev, 1971, pp 30-39 (from RZh-Kibernetika, No 9, Sep 73, Abstract No 9V508)

No abstract

1/1

Public Health, Hygiene and Sanitation

USSR

UDC 612.821:[378.662+378.657

PONOMARENKO, I. I., and BELYAVSKAYA, V. I., Institute of Hygiene imeni
F. F. Erisman

"Comparison of Physiological Changes in Students of Technical and Biological
Faculties During the School Day"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp
33-36

Abstract: Various physiological functions (arterial pressure, pulse rate, reflexes, etc.) and indexes of mental fitness (arithmetic problems, attention span, etc.) were studied in two groups of students at the Moscow Wood Technology Institute. One studied the biological sciences -- soil science, silviculture, plant physiology, etc.; the other studied subjects pertaining to the automation and mechanization of the timber industry -- mathematics, physics, technology of metals, etc. The investigations were carried out during the fall semester before and after classes. At the end of the school day the biology students' performance deteriorated in only one respect, i.e., the rate at which the problems were solved, whereas the technology students' performance deteriorated in all respects, i.e., the rate at which the problems were solved, number of mistakes made, and attention

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USSR

PONOMARENKO, I. I., and BELYAVSKAYA, V. I., Gigiyena Truda i Professional'-nyye Zabolevaniya, No 7, 1971, pp 33-36

span. The authors believe the results of psychological tests plus the changes observed in physiological functions are sensitive enough to permit differentiation of types of intellectual work and justify reorganization of the teaching process to prevent impairment of the students' health.

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USSR

UDC 519.2

MOVA, V. V., PONOMARENKO, I. A.

"Control of a Queueing System with a Finite Queue"

V sb. Prom. kibernetika (Industrial Cybernetics--collection of works), Kiev, 1971, pp 328-338 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V66)

No abstract

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USSR

PONOMARENKO, L. L.

"Stochastic Integrals with Respect to Multiparameter Brownian Motion and Related Stochastic Equations"

Teoriya Veroyatnostey i Mat. Stat. Mezhd. Nauch. sb. [Theory of Probabilities and Mathematical Statistics, Interdepartmental Scientific Collection], 1972, No 7, pp 100-109 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V156 by the author).

Translation: Stochastic integrals with respect to multiparameter Brownian motion $w(x)$ are studied, defined as a Gaussian true random field in the cone of all vectors from R^n with non-negative coordinates, satisfying the conditions

$$Mw(x) = 0, Mw(x)w(y) = \prod_{i=1}^n \min(x^i y^i),$$

where $x = \{x^i\}_{i=1}^n, y = \{y^i\}_{i=1}^n$. Stochastic equations are studied, defined using the stochastic integral indicated above; these equations are generalizations of stochastic differential Ito equations.

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USSR

UDC: 519.2

PONOMARENKO, L. L.

"One Task of Differentiation and Identification of Gaussian Random Functions"

Teor. Kibernetika [Theoretical Cybernetics--Collection of Works], Kiev, 1971, pp 143-150 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V173, by Yu. Shinakov)

Translation: Suppose R_+^n is the set of vectors of n-dimensional space R^n with non-negative coordinates. Multiparameter brownian motion $\xi(x)$ in set $A \subset R_+^n$ refers to a true Gaussian random field $\xi(x)$ such that for all x, y element A

$$M[\xi(x)] = 0, \quad M[\xi(x)\xi(y)] = \sigma \prod_{i=1}^n \min(x_i, y_i), \quad \sigma > 0.$$

Conditions of convergence in the mean square and with probability 1 of the sums of squares of field value increments of $\xi(x)$ on an arbitrary parallel-epiped $[a, b)$ are presented. The results produced are used to construct

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USSR

Ponomarenko, L. L., Teor. Kibernetika, Kiev, 1972, pp 143-150 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V172, by Yu. Shinakov)

estimates of parameters σ and solve the following problem. Suppose each time one of the random fields

$$\eta_i(x) = g(x) + \alpha \xi_i(x), \quad i=1,2, \quad x \in (a, b).$$

is observed, where $g(x)$ is a nonrandom function, $\xi_1(x)$ and $\xi_2(x)$ are independent multiparameter brownian motions with parameters σ_1 and σ_2 , $\sigma_1 \neq \sigma_2$, α is a non-random parameter. There are two observed realizations, and we must establish whether they belong to the same field $\eta_i(x)$ (identification) or different fields $\eta_1(x)$, $\eta_2(x)$ (differentiation).

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Acc. Nr: **AP0052333**

Ref. Code: **UR0238**

PRIMARY SOURCE: *Fiziologichnyi Zhurnal*, 1970, Vol 16, Nr **2**,
pp **190-196**

**PARTICIPATION OF HYPOTHALAMUS IN THE REGULATION
OF CONTENT AND CIRCULATION OF BLOOD AND LYMPH**

P. D. Kharchenko, V. P. Glagolev, V. O. Tsibenko,
L. M. Ponomarenko, L. O. Smirnova
Department of Physiology, State University, Kiev

Summary

The effect of hypothalamus stimulation was investigated on the regional blood circulation, lymph stream rate and lymph content, on the physicochemical properties of blood and acetylcholine content in it.

The data obtained testify to the fact that, when stimulating hypothalamus, there appear not isolated reactions of one system or organ, but the whole complex of vegetative reactions and processes connected between themselves.

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REEL/FRAME

19820919

Pharmacology and Toxicology

USSR

UDC 612.014.4:613.2

PONOMARENKO, N. S., Lt Col Med Serv, TALAN, F. S., and VOLYNETS. M. T.

"Monitoring Toxic Chemicals in Food Products"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1973, pp 59-60

Abstract: Vegetables procured for military units were tested by thin-layer chromatography and the Shekhter-Galler [transliteration] method for the presence of toxic chemicals, chiefly DDT. Traces within public health standards were detected in 21% of the raw potato, 18% of the fresh and pickled cabbage, and 30% of the prepared vegetables sampled. The higher percentage in prepared vegetables is probably due to addition of meat products containing DDT. DDT was also detected in quantities not exceeding 5 mg/kg in subcutaneous, fatty cellular tissue taken from surgical patients, and up to 0.1-0.6 mg/kg in blood and bile. Military physicians must monitor toxic chemicals in food products constantly and see that farms providing produce to military units comply with toxic chemical use, storage, transport, and certification regulations.

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Optical

USSR

UDC 535.317:535.8:621.384

SINTSOV, V. N., Candidate of Technical Sciences, PONOMARENKO,
T. M.

"An Investigation of the Quality of the Image Formed by Some
Optical Objectives in the Infrared Region of the Spectrum"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70,
pp 16-20

Abstract: A procedure is developed for determining the resolution, frequency-contrast characteristics, circle of confusion and integral transmission coefficient of optical objectives which operate in the 1-20 μ wavelength band, and comparative data are given on the quality of the image formed by four such objectives: a reflector and lens system (working range 1-8.5 μ), a reflector (1-19 μ) and two refractors (5-12 and 2-14 μ). It is shown that existing methods for calculating and making optical objectives can be used even at the present time to develop objectives which are close to aberration-free in their parameters. The transparency of infrared refractors may be appreciably increased by effective selection of the optical media and by increasing the 1/l effective illumination.

USSR

UDC: (621.391.82:621.396.44):621.317.743(088.8)

BERKMAN, N. A., ZOLOTAREV, Ya. M., PONOMORENKO, V. A., RAKHLIN, Ya. A.,
SKITOV, I. I., STEKLOVA, I. P.

"A Device for Analyzing Pulse Noises and Interruptions in a Communications Channel"

USSR Author's Certificate No 266858, filed 12 Dec 67, published 15 Jul 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A294 P)

Translation: Conventional devices for measuring and analyzing pulse noises and interruptions in communications channels are designed for studying telephone channels in the 300-3400 Hz range and group channels in high-frequency telephony systems in the 60-108 kHz range. These devices are unsuited for studying channels in the 312-550 kHz range, and moreover they do not give the required resolution and are not distinguished by high reliability. It is proposed that a short-pulse clamping unit be connected between the selector and quantizing modules with a quantizing pulse oscillator output connected to the controlling input of the clamper through a delay element. A pulse time gradation module is connected between a binary counter and the coincidence circuits of the pulse duration analyzer. When the device is operating in the pulse noise analysis mode, it is connected to a free

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BERKMAN, N. A. et al., USSR Author's Certificate No 266858

channel; when operating in the interruption analysis mode, the device is connected to a channel through which a measurement frequency signal is transmitted. A. K.

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USSR

UDC 613.693

ZAVALOVA, N. D. and PONOMARENKO, V. A.

"Change in Mental Habits in Shifting to Piloting by Directors"

Moscow, Voenno-Meditsinskiy Zhurnal, No 9, 1973, pp 54-58

Abstract: To pilot an airplane by manual controls requires different skills and habits from those involved in using directors or on-board computers. Experiments performed under actual flying conditions showed that the transfer from one mode to the other is quite difficult, that special training is essential for this purpose. Without such training fliers tend to rely excessively on the director signals and ignore the readings of various instruments or, in the case of failure of the system, lose all confidence in it.

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- 2 -

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF THE BASICITY OF N SUBSTITUTED LACTAMS BY AN IR
SPECTROSCOPIC METHOD -U-
AUTHOR--(05)-GORSHKOVA, G.N., KOLODKIN, F.L., POLISHCHUK, V.V.,
POVOMARENKO, V.A., SIDELKOVSKAYA, F.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 550-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LACTAM, IR SPECTRUM, PHENOL, DEUTERIUM COMPOUND, HYDROXYL
RADICAL, DETONE, PYRROLES, HETEROCYCLIC NITROGEN COMPOUND,
CYCLOHEXANONE, SOLUTION ALKALINITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0741 STEP NO--UR/0062/70/000/003/0550/0554
CIRC ACCESSION NO--AP0124411
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124411

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA WERE USED TO ASSESS THE VALUES OF THE ASSOCN. CONSTS. OF THE FOLLOWING COMPOS. WITH PHOH, FROM THE VALUES OF SPECTRAL SHIFTS OF OH AND OD BANDS (VALUES OF K SUBASS IN L.-MOLE SHOWN): PYRROLIDONE 160, N,METHYLPYRROLIDONE 175, N,(2,3,EPOXYPROPYL)PYRROLIDONE 140, N,ALLYLPYRROLIDONE 135, N,VINYLPYRROLIDONE 48, PIPERIDONE 225, N,ALLYLPIPERIDONE 180, N,VINYLPIPERIDONE 52, CAPROLACTAM 185, N,ALLYLCAPROLACTAM 145, N,VINYLCAPROLACTAM 49, PYRROLIDINE 185, PIPERIDINE 170, CYCLOPENTANONE 11, AND CYCLOHEXANONE 12. THUS, A RELATION OF BASICITY OF THESE COMPOS. TO THE NATURE OF THE N SUBSTITUTENT WAS DEMONSTRATED. THE ASSOCN. OF PHOH WITH THESE RING SYSTEMS AT THE CARBONYL GROUP DOES NOT EXCLUDED THE POSSIBILITY OF ASSOCN. AT THE N ATOM. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--POLYMERIZATION OF OPTICALLY ACTIVE ISOAMYL GLYCIDYL ETHER IN THE
PRESENCE OF A DIETHYLZINC WATER CATALYTIC SYSTEM -U-
AUTHOR--(03)-IICHENKO, A.A., PONOMARENKO, V.A., KLABUNOVSKIY, YE.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970. (1), 70-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--OPTIC PROPERTY, STEREO CHEMISTRY, POLYMERIZATION, ETHER,
CHEMICAL REACTION RATE, ORGANOZINC COMPOUND, CATALYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0731 STEP NO--UR/0062/70/000/001/0070/0073
CIRC ACCESSION NO--AP0113595
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113595

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SP. OPTICAL ROTATION (ALPHA) AT 407.7 MU OF POLY (ISOAMYL GLYCIDYL ETHER) I, OBTAINED BY THE ANIONIC COORDINATION POLYMERIZATION IN THE PRESENCE OF 1:1 ET SUB2 ZN-H SUB2 O, INCREASED TO A MAX. OF EQUIVALENT 60DEGREES WHEN THE CONVERSION REACHES 18PERCENT AND DECREASES SUBSEQUENTLY. THIS IS DUE TO THE EXISTENCE OF 4 OPTICAL ISOMERS OF ISOAMYL GLYCIDYL ETHER WHICH HAVE DIFFERENT (ALPHA) AND DIFFERENT POLYMERIZATION RATES. ("ISOAMYL" IN THIS CASE IS A MIXTURE OF 3 METHYL BUTYL AND OPTICALLY ACTIVE 2 METHYL BUTYL.) THE INCREASE IN I (ALPHA) DETN. TEMP. FROM 20 TO 40DEGREES INCREASES (ALPHA) EQUIVALENT 2.5 TIMES. THE MOL. WT. OF I INCREASES WITH THE CONVERSION. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--POLYMERIZATION OF EPICHLOROHYDRIN WITH TRIETHYLALUMINUM, WATER,
TRIFLUORETHANOL OR TRIETHYLALUMINUM, TRIFLUOROETHANOL CATALYTIC SYSTEMS
AUTHOR--(C3)--PONOMARENKO, V.A., DEBORIN, M.G., SERGEYEV, I.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 925-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYMERIZATION, EPICHLOROHYDRIN, ORGANOALUMINUM COMPOUND,
CATALYST, FLUORINATED ORGANIC COMPOUND, FROST RESISTANCE, ETHANOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1313 STEP NO--UR/0062/70/000/004/0925/0926
CIRC ACCESSION NO--AP0134987
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134987

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMER OF EPICHLOROHYDRIN AT 20 DEGREES IN THE PRESENCE OF 0.1 PERCENT 1.0:0.3:0.2 ALET SUB3, H SUB2 O, CH SUB3 CH SUB2 OH CATALYST MIXT. GAVE 65 PERCENT POLYMER OF MOL. WT. 154,000. THE POLYMER WITH 0.1 PERCENT 1:0.8 AL, ET SUB3, CH SUB3 CH SUB2 OH GAVE 52 PERCENT POLYMER OF MOL. WT. 112,000. THESE POLYMERS WERE LESS THAN OR EQUAL TO 4 PERCENT CRYST., HAD LOW GLASS TEMP. AND WERE EXPECTED TO HAVE BETTER COLD RESISTANCE THAN SIMILAR POLYMERS PREPD. WITH ALET SUB3, H SUB2 O, SOLVENT SYSTEMS (BRIT. 848,306). FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, USSR.

UNCLASSIFIED

USSR

UDC 632.95

BADULIN, A. V., Chief of the Division of Plant Protection, Volga Scientific Research Institute of Irrigation Agriculture; BURDALAYEVA, T. S., All-Union Scientific Research Institute of Reclamative Afforestation; POPOV, N. A., Chief of the Laboratory of Chemico-Biological Control, Volgograd Disinfection Station; and PONOMARENKO, V. F.

"Studies on Applications of Dibrom"

Moscow, Zashchita Rasteniy, Vol 17, No 6, 1972, pp 32-33

Abstract: Organophosphorus compounds, although highly toxic with respect to their action as insecticides and acaricides, are relatively safe as far as contamination of the environment and accumulation in food products are concerned. The applications of dibrom, which decomposes rapidly and hence does not present any serious danger to the health of human beings, were studied for these reasons. Dibrom is available in the form of a 50% emulsion containing OP-10 as the emulsifier. To test the effectiveness of dibrom against household insects (the common cockroach, bedbugs, and various species of flies including the house, bluebottle, greenbottle, blow, and flesh flies), the insects were placed in contact with a plywood sheet treated with a dibrom emulsion in the amount of 100 g/m². After a 15 min contact with the plywood sheet, the still living insects were removed and observed.

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USSR

BADULIN, A. V., et al., Zashchita Rasteniy, Vol 17, No 6, 1972, pp 32-33

Dibrom in a concentration of 0.5-1% killed cockroaches in 3-72 hrs, producing an irreversible paralysis in 1 hr. In a concentration of 0.25-0.5% dibrom killed bedbugs in 3-24 hrs and produced paralysis in 10-15 min. In a concentration of 0.5-0.1% / 0.5-1% / it killed all flies in 3-5 min. The surface treated with dibrom remained effective against cockroaches and bedbugs for a period up to 24 hrs and against flies for a period up to 3-4 days. Bait poisoned with 0.25-0.5% dibrom was effective against cockroaches. On being sprayed on plants infested with the insect pests, an 0.15% emulsion of dibrom killed all pea and rose aphids and an 0.1% emulsion all larvae of the fig cicada and of the rose sawfly within 4-5 hrs. An irreversible paralysis was produced within the first few minutes of contact of these insects with dibrom. Larvae of the elm leaf beetle were resistant to dibrom. Dibrom in a concentration of 0.2% was effective against larvae of the fox-colored sawfly. The dibrom emulsions did not burn the plants and preserved their toxicity for 35 days (the time during which observations were carried out) on being kept at 20-23° after preparation.

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AA0040669

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, ^{3/70}

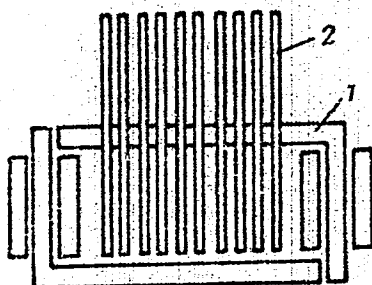
234573 BALLAST RESISTOR for gas-electrical welding, has a particularly good performance for carbon dioxide welding because its inductance remains always constant. It consists of several coils of high-resistance with mounted on a common magnetic circuit assembled from two L-shaped cores of electric steel punchings 0.5-1 mm. thick with nonmagnetic gaps at their joints. 3.11.67. as 1195309/25-27. I.I. ZARUBA et al. E.O. PATON Electrowelding Inst. (29.5.69.) Bul.4/10.1.69. Class 21h. Int.Cl. B23k.

AUTHORS: Zaruba, I. I.; Sidorenko, M. N.; and Ponomarenko, V. G.

Institut Elektrosvariki imeni Ye. O. Patona

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AA0040669



LD

19750267

USSR

KAZUSHCHIK, V. A.; LADES, V. I.; PONOMARENKO, V. K. (Institute of Mathematics, Belorussian Academy of Sciences)

"Combinative Schemes for Comparing Values of a Linear Function with a Number Different from Zero"

Minsk, Vestsi Akademii Navuk BSSR: Seryya Fizika-Matematichnykh Navuk; March-April, 1972; pp 66-72

ABSTRACT: The authors present an algorithm for the synthesis of combinative schemes for comparing the values of linear functions with a number L which is different from zero, for the case in which an interrogating signal is propagated from the low-order digit to the high-order digit of the expression. Conditions are found for the regularity of the structure for the class of comparison schemes considered. It is shown that if the arguments of a linear function are binary numbers with a fairly large quantity of digits and if it is possible to isolate sequences in the number L consisting only of zeros or only of ones, then the comparison schemes considered have portions with a regular structure.

The method of synthesis suggested is illustrated with examples. The article contains three tables and two figures. There are 3 bibliographic references.

1/1

USSR

UDC [537.226+537.311.33]:[537+535]

PONOMARENKO, V. K., KONONOV, A. N., SOROKIN, E. I., DUMANOV, M. YU.,
REYFMAN, M. B.

"Determining Certain Parameters of n-Type Silicon Carbide Crystals"

Sb. nauch. tr. Mosk. inzh.-fiz. in-t. Vech. otd. (Collection of Scientific
Works of Moscow Engineering Physics Institute. Evening Division), Chelyabinsk,
1971, pp 23-36 (from RZh Fizika, No 12, Dec 71, Abstract No 12Yel303)

Translation: It was observed from measurements of the Hall effect and electrical conductivity that the electron concentration in the crystals studied varied at room temperature from $3 \cdot 10^{16}$ to $5 \cdot 10^{17} \text{ cm}^{-3}$ and the mobility μ varied from 270 to 170 $\text{cm}^2/\text{sec} \cdot \text{v}$. Scattering by thermal oscillations of the lattice makes the basic contribution to the mobility. The concentration of carriers n , as determined on the basis of the value of μ , differs from the corresponding values obtained on the basis of the Hall temperature curves by not more than 20-25%. An explicit dependence of n and μ on the dislocation density was not observed. Resume.

1/1

USSR

UDC 616.832.9-008.8:616.981.49]074

PONOMARENKO, V. N., MIKHAYLENKO, A. F., and PETROVA, T. A.

"Isolation of the Mendoza Type Salmonella from Spinal Fluid"

Kiev, Vrachebnoye Delo, No 9, 1971, pp 117

Abstract: A pure Mendoza type Salmonella culture was isolated from the spinal fluid of a 2-month-old infant who died of purulent meningoencephalitis and cerebral edema. The child, fed whole cow's milk since it was 3 weeks old, had been hospitalized 6 days for bilateral acute catarrhal otitis and parenteral dyspepsia.

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PONOMARENKO, V. V.

CONTROL RODS FOR FAST REACTORS WITH SODIUM COOLANTS

Article by S. A. Kuznetsov, V. Ye. Melamed, V. K. Nevelin, and V. V. Ponomarenko, Dnepropetrovsk, Podolnichenyushchaya Materialy i Stroyeniye (Podolnichenyushchaya Materialy i Stroyeniye) (Abstracting Materials and Control Rods for Fast Reactors), Russian, International Working Group for Fast Reactors Specialists Meeting, Dnepropetrovsk, 4-8 June 1973.

1. Introduction

In the practice of reactor construction, various methods of regulating the nuclear reaction occurring are known. The most widely distributed method for fast reactors with a sodium coolant is absorption of the neutrons by regulating rods. At the present time, this method is being used in reactors that have been built or are under construction: the BOR-60, BN-350 and BN-600 [1].

The basic functions of the regulating rod (control rods) of fast reactors are:

- compensation of temperature and power effects;
- compensation of burn-up;
- regulation of power;
- emergency stopping.

In distinction from water-cooled, water-moderated reactors, control rods of fast reactors have a number of principal features, associated with the specifics of the operating conditions in the reactor. All the control rods developed at the present time are intended for operation in a medium of liquid sodium in a temperature range of 400 -- 700°C at maximum liquid sodium flow rates of up to 1×10^4 n/cm² per second. The hard spectrum, high neutron fluxes and high temperatures, and the aggressive medium impose a number of specific requirements upon the materials of the control rods with respect to efficiency, permissible energy liberation and burn-up, physico-chemical properties, and radiation stability.

was given
20 May 73
B

1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--AN AUTOMATIC BARNACLE REMOVAL MACHINE -U-
AUTHOR--PONOMARENKO, YU. P
COUNTRY OF INFO--USSR
SOURCE--BAKINSKIY RABOCHIY, APRIL 30, 1970, P 4, COL 1
DATE PUBLISHED--30APR70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SHIPYARD, SHIP HULL, BARNACLE, CLEANING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0829 STEP NO--UR/9000/70/000/000/0004/0004
CIRC ACCESSION NO--AN0104268

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AN0104268

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GRIGORIY CHITANAVA, DIRECTOR OF THE NOVOROSSIYSK SHIP REPAIR PLANT, AND ANATOLIY FIKS, CHIEF OF THE DEPARTMENT OF NEW EQUIPMENT OF THE SAME PLANT, HAVE INVENTED AN AUTOMATIC MACHINE FOR REMOVAL OF RUST AND BARNACLES OFF SHIPS HULLS. THE MACHINE CLEANS 60 TO 120 SQUARE METERS AREA PER HOUR.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INTERACTION OF LOW AMPLITUDE WAVES WITH SUBSTANTIAL FREQUENCIES -U-
AUTHOR--PCNEMARENKO, YU.B. *P*
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL TEKHNIЧЕСКОИ ФИЗИКИ, VOL. 40, APR. 1970, P. 702-710
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--WAVE MECHANICS, HYDRODYNAMIC THEORY, LIGHT SOURCE, DIELECTRIC
MAERIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1319 STEP NO--UR/0057/70/040/000/0702/0710
CIRC ACCESSION NO--AP0124970

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124970

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE INTERACTION EFFECTS BETWEEN THE LOW AMPLITUDE WAVES AND THE SUBSTANTIAL FREQUENCIES, USING AVERAGING METHODS. IT IS FOUND THAT LONG PERIODS OF TIME, THE WAVE AMPLITUDES TEND TO ADOPT STATIONARY VALUES WHICH ARE NOT MUCH DIFFERENT FROM INITIAL ONES. THE DIFFERENCE CONSISTS IN THE SYSTEM PROPERTIES AND DISTRIBUTION OF INITIAL AMPLITUDES. THE RESULTS OBTAINED ARE USED FOR A HYDRODYNAMIC DESCRIPTION OF WAVES IN A COLLISIONLESS PLASMA. AS AN EXAMPLE, THE PROPAGATION OF A SELF FOCUSING LIGHT BEAM IN A NONLINEAR DIELECTRIC IS EXAMINED. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ZEMNOGO MAGNETIZMA, LONOSFERY I RASPROSTRANENIIA RADIOVOLN, MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--MECHANISM OF FORMATION OF ACTIVE REGIONS -U-
AUTHOR--PONOMARENKO, YU.B. P
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ASTRONOMICHESKIY ZHURNAL, VOL. 47, NO. 1, 1970, PP. 98-102
DATE PUBLISHED-----70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--SOLAR MAGNETIC FIELD, SOLAR ACTIVITY, SUNSPOT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1991/0740 STEP NO--UR/0033/70/047/001/0098/0102
CIRC ACCESSION NO--AP0110464
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110464

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR POSTULATES A MECHANISM IN WHICH THE MAGNETIC FIELD OF AN ACTIVE REGION IS FORMED DURING THE EMERGENCE OF THE SUN'S TOROIDAL FIELD AT THE SURFACE. IT IS SURMISED THAT THE SURFACING OF THE TOROIDAL FIELD COMES ABOUT THROUGH THE MOVEMENT OF GIANT GRANULES, CONVECTIVE CELLS MEASURING SIMILAR TO 180,000 KM AND WITH A LIFETIME OF ABOUT ONE MONTH. THE VELOCITY OF MOVEMENT AT THE SURFACE IS SIMILAR TO 80 M-SEC; THE GAS RISES AT THE CENTER OF THE GIANT GRANULES AND DESCENDS ALONG THE PERIPHERY. THE ASYMMETRY OF THE SPOTS AND INCLINATION OF THE ACTIVE REGION AXIS TO THE EAST WEST LINE ARE RELATED TO THE INFLUENCE OF CORIOLIS FORCE ON MOVEMENT IN THE GIANT GRANULES. THIS HYPOTHESIS OF THE EXISTENCE OF GIANT GRANULES WITH THE DESCRIBED PROPERTIES MAKES IT POSSIBLE TO EXPLAIN THE MAIN CHARACTERISTICS OF FORMATION AND DEVELOPMENT OF ACTIVE REGIONS. FACILITY: INSTITUTE OF TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO WAVE PROPAGATION.

UNCLASSIFIED

Nitrogen Compounds

USSR

UDC 547.821+547.732+547.722

PONOMAREV, A. A., (DECEASED), and MARTEM'YANOVA, N. I., Saratov State University imeni N. G. Chernyshevskiy, Saratov

"Aminoesters of Heterocyclic Dicarboxylic Acids"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 4, Apr 71, pp 515-518

Abstract: By condensing the dichlorides of 2,5-furan and 2,5-tetrahydrothiophenedicarboxylic acids with 1-methyl-, 1-ethyl-, or 1-butyl-3-hydroxypiperidine, the corresponding amino esters were obtained in the form of their hydrochlorides. These were converted into the bases and the latter into diiodomethylates. The formulas and properties of 13 compounds that were prepared are listed in a table. These compounds are of interest from the standpoint of the physiological activity which they may exhibit. Many aminoesters of alicyclic carboxylic acids have antispasmodic, antihistaminic, and curariform activity, while some of them lower the blood pressure.

USSR

UDC: 621.375:621.317

PONOMAREV, A. N., SELYATITSKIY, V. G.

"A Voltage Amplifier Which is Adaptive to a Range of Variation in the Input Signal"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam, T. 3 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 122-123 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A410)

Translation: In devices for registrations of signals which vary in amplitude over a wide dynamic range, the use of logarithmic amplifiers is limited by the high error in gain on the lower section of the dynamic characteristic of the amplifier. An automatic device is proposed for stepped control of amplification by changing the depth of the negative feedback which encompasses the amplifier. A block diagram of the device is given and its operation is explained. One illustration. E. L.

1/1

1/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SELECTION OF THE OPTIMUM PARAMETERS OF MULTICHANNEL ATOMIC BEAM
SHAPING DEVICES -U-
AUTHOR-(02)-GORDON, YE.B., PONOMAREV, A.N. P
COUNTRY OF INFO--USSR
SOURCE--ZH. TEKH. FIZ. 1970, 40(5), 1120-7
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LASER BEAM CONTROL DEVICE, GAS LASER, HYDROGEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0933 STEP NO--UR/0057/70/040/005/1120/1127
CIRC ACCESSION NO--AP0131519
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0131519

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW METHOD IS PROPOSED FOR CALC. OPTIMUM PARAMETERS OF A MULTICHANNEL AT. BEAM SHAPING DEVICE. THE METHOD TAKES INTO ACCOUNT THE RECOMBINATION OF ATOMS INSIDE THE CAPILLARY CHANNELS. THE VALUES OF THE AT. FLUX INTO SOLID ANGLE Ω AND THE TOTAL FLUX OF ATOMS AND MOLES. WERE CALCD. FOR VARIOUS RATIOS OF THE CAPILLARY RADIUS TO LENGTH AND FOR VARIOUS VALUES OF THE RECOMBINATION PROBABILITIES ON THE CHANNEL SURFACE ϵ . OPTIMUM PARAMETERS WERE DETD. FOR THE H AT. BEAM SHAPING DEVICE OF A H LASER. THE SHAPING DEVICE PROVIDES THE NEEDED H ATOM FLUX AT A GIVEN Ω AT A MIN. VALUE OF THE TOTAL AT FLUX. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 678.5.01:624.074.4.001

VOL'MIR, A. S., and PONOMAREV, A. T., Moscow

"Non-Linear Parametric Oscillations of Cylindrical Shells from Composite Materials"

Riga, Mekhanika Polimerov, No 3, May-Jun 73, pp 531-539

Abstract: The dynamic properties of a tip borne shell made from a composite material were investigated under composite loads using an orthotropic model as the base. Geometrically non-linear dynamic equations of the theory of slanting shells plotted on the basis of the Kirchhoff-Love hypothesis were used for solving the problem. Different loading conditions were studied: the joint action of a pulsating longitudinal load and a static outer pressure the joint action of a pulsating outer pressure and a static axial compression; the wave processes on the middle surface were disregarded. Calculation results are presented in form of graphs. The applied investigation method can be used to study components of structures made from other types of composite materials. Seven figures, five bibliographic references.

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USSR

UDC: 539.377+539.434

VOL'MIR, A. S., PONOMAREV, A. T., Moscow

"Dynamic Stability of Cylindrical Shells During Rapid Heating"

Kiev, Prikladnaya Mekhanika, Vol. 8, No. 1, 1972, pp 3-9

Abstract: The behavior of a closed cylindrical shell, articulated with bearings which are nonmoving in the longitudinal direction and unevenly heated through their thickness is studied under the influence of a rapidly rising thermal load. The nonlinear dynamic equations from the theory of smooth shells are produced, considering the initial irregularities and forces of inertia corresponding to normal displacements; the change in mechanical characteristics of the material as a function of temperature is considered. Calculation relationships are produced using the method of Ritz and integrated by the method of finite differences on the BESM-2M computer. The numerical results are presented as graphs.

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UDC 632.954:635.34

USSR

MEREZHUNSKIY, YU. G., PONOMAREV, G. S., and ZIN'KOVICH, A. M., Institute of Plant Physiology, Academy of Sciences Ukrainian SSR

"Testing of Semeron on Cabbage Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 1, Jan 70, pp 50-52

Abstract: Tests conducted by the authors in 1967 and 1968 show that the use of semeron (Desmetryne) makes it possible to grow cabbage by the direct seeding method and to dispense with manual labor in caring for the vegetable. Field experiments with white cabbage were conducted at the Kiev Vegetable Varietal Plot and at the "Buchanskiy" and "Tarasovski" sovkhozes in Kiyevskaya Oblast. Results indicate that direct-seeded cabbage should be treated with semeron in the two- to four-leaf phase, the period when it is completely unharmed by the herbicide and weeds are most susceptible to it. Transplanted cabbage should be treated with the herbicide 2-3 weeks after transplanting. Doses should not exceed 1.5-2.0 kg/ha. Semeron retains its toxicity 2-2.5 months in mineral soil, up to one month in peaty soil.

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UNCLASSIFIED

PROCESSING DATE--18SEP70

1/2 011

TITLE--TESTING SEMERON ON CABBAGE PLANTINGS -U-

AUTHOR--(03)-MEREZHINSKIY, YU.G., PONOMAREV, G.S., ZINKOVICH, A.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(1), 50-2

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, AGRICULTURE

TOPIC TAGS--HERBICIDE, AGRICULTURE CROP, SOIL TYPE/(U)SEMERON HERBICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0723

STEP NO--UR/0394/70/008/001/0050/0052

CIRC ACCESSION NO--AP0108929

UNCLASSIFIED

2/2 : 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEMERON AT 1.5-2.0 KG-HA IS EFFECTIVE AGAINST WEEDS AND SAFE FOR CABBAGE PLANTINGS WHEN APPLIED AT THE 2-4 LEAF STATE OR 2-3 WEEKS AFTER PLANTING. SEMERON IS EFFECTIVE FOR 2-2.5 MONTHS IN MINERAL SOIL OR 1 MONTH IN PEAT SOIL.

UNCLASSIFIED

USSR

UDC 581.48:621.039.5

~~PONOMAREV, G. V.~~, Candidate of Biological Sciences Kaluga Agricultural Experimental Station

"Dose-Related Radiobiological Effects of Exposure of Seeds in a Reactor"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenin, No 1, 1971, pp 9-11

Abstract: Air-dried buckwheat and barley seeds were exposed in an IRT-2000 reactor to 1,500-3,000 and 800 to 1,430 rad of fast neutrons respectively for up to 5 hours. The exposed and control seeds were planted in the open ground and studied for growth rate, survival rate and fertility of plants. The mixed results are presented in a series of graphs. For example, in diploid buckwheat, 2,500 rad had no effect on the growth processes when delivered at the rate of 0.61 krad/hour, but at a higher rate caused considerable damage, including stunted growth and death of plants. In tetraploid buckwheat, 3,000 rad delivered at the rate of 0.61 krad/hour did not have this effect. However, the same dose delivered at 3.4 and 13.0 krad/hour severely damaged the seeds and resulted in slow initial growth and sparse stands. In the experiments with barley, dose rates of 1.3 and 3.4 krad/hour caused the greatest radiation damage.

1/1

I/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RING CURRENTS AND NUCLEAR MAGNETIC RESONANCE IN PORPHYRINS -U-

AUTHOR--(04)-MAMAYEV, V.M., PONOMAREV, G.V., ZENIN, S.V., YEVSTIGNEYEVA,
R.P.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 40-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEAR MAGNETIC RESONANCE, PORPHYRIN, PROTON, PYRROLES

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/2133

STEP NO--UR/0379/70/006/001/0040/0046

CIRC ACCESSION NO--AP0125717

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0125717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHOD OF R. MC WEENY FOR CALCN. OF PI ELECTRON CURRENT IN AROMATIC MOLECULES WAS MODIFIED FOR PORPHYRINS. DISTRIBUTION OF RING CURRENTS OF PI ELECTRONS AND THEIR CONTRIBUTIONS TO CHEM. SHIFTS OF NH, BETA H, MESO PROTONS, AND ME PROTONS OF PORPHYRINS WITH CO SUB2 ET AND ME GROUPS IN THE FORM OF DICATIONS AND FREE BASES WAS CALCD. ON FORMING THE DICATION, THE PI ELECTRON CURRENT ALONG THE INTERNAL CONJUGATION RING INVOLVING NITROGEN ATOMS IS LOWERED, THE OVERALL RING CURRENT BEING HIGHER BY 10PERCENT. INTRODUCING AN ELECTRON ACCEPTOR SUBSTITUTENT IN THE BETA POSITION ENHANCES PI ELECTRON CURRENT THROUGH C N BONDS OF THE CORRESP. PYRROLE RING AND SIMULTANEOUSLY LOWERS THE OVERALL PI ELECTRON CURRENT. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.396.6-181.5

MALIN, B. V., PONOMAREV, K. M.

"Semiconductor Integrated Circuits for Transducers of Nonelectrical Quantities to Electrical Quantities"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1319-1329

Abstract: The authors consider semiconductor microcircuits designed for converting nonelectrical quantities into electrical quantities and combining elements sensitive to nonelectrical action and elements which operate with electric signals. Problems of developing microcircuits which register optical emission, mechanical stresses and magnetic field strength based on modern advances in microelectronics are discussed. The advantages of the proposed microcircuits are analyzed together with the part they are expected to play in the future development of conversion devices. Typical illustrative examples are presented. Eleven figures, bibliography of thirty-eight titles.

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USSR

(18)

BALOSHIN, O. N., BLAGORODOV, A. M., BOLONKIN, B. V., VLADIMIRSKIY, V. V.,
GORIN, YU. P., GRIGOR'YEV, V. K., GRISHIN, A. P., YEROFEYEV, I. A., KOROL'KOV,
I. YA., LUZIN, V. N., MILLER, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N.,
PLIGIN, YU. S., PONOMAREV, L. A., SIROTKIN, S. M., SOKOLOVSKIY, V. V., TARASOV,
YE. K., TIKHOMIROV, G. D., TROSTINA, K. A., TURCHANOVICH, L. K., and SHKURENKO,
YU. P., Institute of Theoretical and Experimental Physics GKI AE (State
Committee for the Use of Atomic Energy)

"The $K^-p \rightarrow K^0n$ Charge Exchange Reaction at a Pulse of 39 GeV/sec"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

Abstract: The authors present the measurement results from studying the charge exchange reaction of K^- -mesons on protons ($K^-p \rightarrow K^0n$) at a pulse of 39 GeV/sec. The study was carried out using the ITEP 6-m magnetic track spectrometer. The working volume of the magnetic field of the spectrometer was $1.0 \times 1.5 \times 6$ m. Twelve optical spark chambers were located inside the magnet, with each chamber having eight spark gaps (10 mm each). The chamber electrodes consisted of two layers of aluminum foil 14 microns thick. The photographs were taken through a special slit in the magnet yoke. A mirror system made it possible to obtain three stereoprojections of all of the chambers

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USSR

BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544 with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The K^- -mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately $5 \cdot 10^7 K^-$ -mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of 7.4 ± 1.2 microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to -1.58 ± 0.05 . The authors thank K. G. Boreskov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section on pulse transfer (dc/dt). This dependence is compared with predictions of the Regge pole model.

1/1

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USSR

UDC 621.396.677.833.2

VOSKRESENSKIY, D. I., ~~PONOMAREV, L. I.~~, GRINEV, A. Yu.

"Optimum Sum-Difference Characteristics of Spherical Convex Antennas"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1170-1180

Abstract: The problem of optimizing the sum-difference characteristics of spherical nonsuperdirectional antennas which are a system of slot radiators arranged on a conductive spherical surface is solved by the method of vector eigenfunctions, utilizing the theory of quadratic forms. The maximum directive gain of the effective radiation pattern is found with regard to diffraction phenomena on the surface of the antennas, as well as the maximum directive gain of the difference characteristic in the two principal directions deviating symmetrically from the equal-signal direction, and the slope of the difference radiation pattern in the equal-signal direction. These maxima are compared with the corresponding maximum values for an equivalent flat aperture. It is shown that when the electrical radius is short, a spherical antenna may give somewhat of a gain in the three maxima; when the electrical radius is much greater than $ka = 10$, the maximum directive gains of sum and difference radiation patterns and the slope of the difference

1/2

USSR

VOSKRESENSKIY, D. I., et al., Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1170-1180

characteristic in the equal-signal direction for the optimum spherical antenna are practically equal to the corresponding values for an equivalent flat aperture. Spherical nonsuperdirectional antennas are synthesized with space-amplitude sum-difference radiation patterns having minimum side emission. It is shown that the sum (difference) radiation pattern may be represented by a Chebyshev polynomial multiplied by some weakly directional factor.

2/2

- 6 -

USSR

UDC: 621.396.677.833.2

GRINEV, A. Yu., PONOMAREV, L. I.

"Optimization of Spherical Monopulse Antennas With Respect to the Slope and Directive Gain of the Difference Characteristic"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970, vyp. 203, pp 23-47 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2B97)

Translation: The formulated problem is solved by the method of vector eigenfunctions for a spherical antenna which is an idealized system of slot radiators located on an ideally conducting surface. A rigorous solution is found for the problem of maximum directive gain for calculating radiation patterns and amplitude-phase distribution; a solution is given for the problem of maximum slope of the difference radiation pattern in the direction of the antenna bearing; the characteristics of optimum spherical antennas are compared with the corresponding characteristics of an equivalent flat aperture. Twelve illustrations, bibliography of seven titles.
N. S.

1/1

USSR

UDC: 621.396.67.12.126

PONOMAREV, L. I.

"Minimization of Side Emission in Spherical Antennas"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970,
vyp. 203, pp 48-66 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B13)

Translation: The paper deals with the problem of minimizing the level of side emission which is reached at a given beam width, and the minimum beam width at a given level of side emission for a spherical antenna made in the form of elementary radiators of the diffraction type cut in an ideally conducting spherical surface. The radiators are fairly closely spaced. An analysis is made of the effect which the discreteness of excitation of the antennas has on the level of side emission. Six illustrations, bibliography of eight titles. N. S.

1/1

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1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SLCW COLLISONS IN A THREE BODY SYSTEM INVOLVING COULOMB INTERACTION
III. SCATTERING LENGTHS FOR COLLISION PROCESSES BETWEEN HYDROGEN
AUTHOR--(02)--MATVEYENKO, A.V., PONOMAREV, L.I.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1640-1645
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--COLLISION, COULOMB INTERACTION, HYDROGEN, PARTICLE SCATTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0023 STEP NO--UR/0056/70/058/005/1640/1645
CIRC ACCESSION NO--AP0127673
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0127673

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SCATTERING LENGTHS AND THE LIMITS OF APPLICABILITY OF THIS CONCEPT ARE DETERMINED FOR SYMMETRIC CHARGE EXCHANGE PROCESSES IN HYDROGEN MESOATOMS (PRIME1) BY APPLYING THE PHASE FUNCTION TECHNIQUE. THE VALUES OF THE SCATTERING LENGTHS FOR ALL THREE PROCESSES IN EVEN (A SUBG) AND ODD (A SUBU) CHANNELS ARE PRESENTED IN THE TABLE. FACILITY: QB"YEDINENNYI INSTITUT YADERNYKH ISSLEDGVANIY. FACILITY: INSTITUT TEORETICHESKOY FIZIKI, AKADEMII NAUK UKRAINSKOY SSR.

UNCLASSIFIED

USSR

UDC 621.436:629.113

PONOMAREV, O. P., and BULGAKOV, D. A., Leningrad Carburetor Works

"On the Possibilities of Increasing the Technical-Economic Characteristics of Two-Stroke Diesels"

Moscow, Avtomobil'naya Promyshlennost', No 4, Apr 73, pp 10-12

Abstract: A pneumatic corrector has been developed for the YAAZM204A diesel engine force pump, series 80, which lowers the specific fuel consumption by 20-25g/erg-horsepower hour, almost as low as with a series 60 force pump, by increasing air use efficiency. The amount of NO, CO and C in exhaust using the corrector is also similar to that found using a series 60. However torque and power are increased, approaching that of the uncorrected series 80 at high rpm. The use of a sprayer force pump with 10 nozzles in the HAAZ-M204V diesel engine was also investigated. Velocity conditions were lowered and 170 horsepower could be obtained without increasing the upper limit of hourly fuel consumption, or thermal stress. Application of these improvements can bring the technical-economic characteristics of the two-stroke YAAZ diesels up to those of the four stroke YAMZ diesels.

1/1

- 121 -

AA0052561

PONOMAREV O.V. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

2/70

244554 SPINNERET NOZZLE HOLDER comprises
cylindrical body 1 with edge 2 supporting
nozzle plate 3, screen 4, spacer 5 and strainer 6.
The latter is surmounted by melt feeding cup 7 with
flanges 8 & 9 in slots 10 & 11 of the body, and
sealed by disc 13 secured in the body by bayonet
connector 12. The melt is fed through channel 16,
and the holder is fitted in nest 18 where it is
clamped by screw 19.

9.10.67. as 1190372/28-12. PONOMAREV, O.V. et al.
Synthetic Fibres Equipment Design Office.
(8.10.69) Bul. 18/28.5.69. Class 29a, Int. Cl.
D Old.]

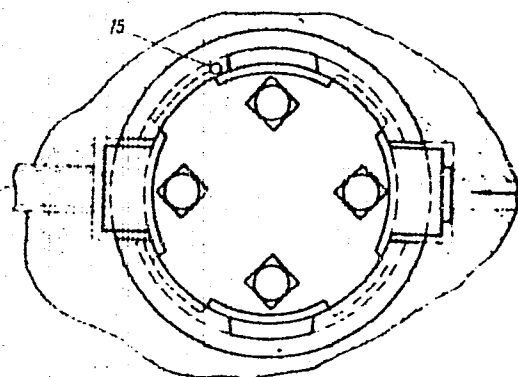
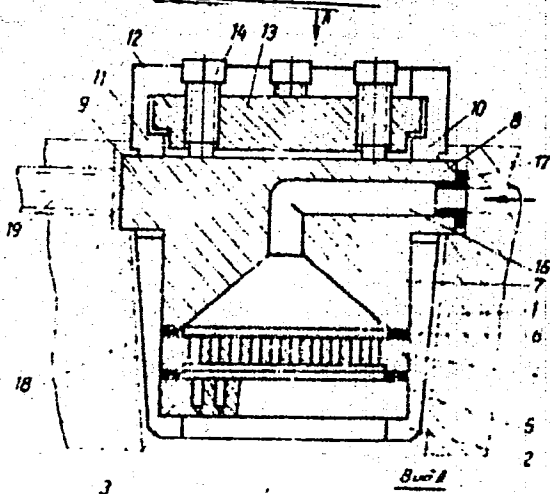
1/2

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19821238

AA0052561

Ponomarev, O.V.; Rudovskiy, B.A.; Zel'din, L.M.; Katsman, A.F.:
 Spetsial'noye Konstruktorsko-Tekhnologicheskoye Byuro Mashin
 Khimicheskikh Volokon



19821239

MT

USSR

UDC 576.809.53

VOYTOVICH, YA. V., GRIKHUTNIKOVA, G. P., MIKHAYLOV, V. I., and PONOMAREV, P. I., Institute of Physics, Siberian Branch, Academy of Sciences USSR

"Autotrophic Culturing of Hydrogen-Oxidizing Bacteria in Continuous Culture"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 7, No 2, Mar/Apr 71, pp 183-188

Abstract: Autotrophic assimilation of CO_2 with simultaneous regeneration of O_2 , H_2O , and some food has been discussed in the literature. Use for this purpose of H_2 bacteria capable of utilizing CO_2 as a source of C while deriving energy from the oxidation of H_2 is preferable to that of photo-autotrophs, because less energy is expended per unit amount of synthesized biomass. Hydrogenomonas eutropha Z-1 were culture continuously in a laboratory vessel with a capacity of 5-7 l. and was filled up to 2 l. A solution containing (in g/l.) Na_2HPO_4 1, KH_2PO_4 3, MgSO_4 0.1, CaCl_2 0.02, Fe citrate 0.25 was used, to which 10% urea and the trace elements B, Co, Cu, Mn, Zn, Mo, and Ni in the form of a Hoagland solution has been added. A mixture of CO_2 , O_2 , and H_2 was 1/2

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USSR

VOYTOVICH, YA. V., et al., Prikladnaya Biokhimiya i Mikrobiologiya, Vol 7, No 2, Mar/Feb 71, pp 183-188

continuously pumped in. Automatic control based on continuous measurement of optical density was applied. When the optical density reached a certain level, a part of the culture was withdrawn and fresh nutrient medium added. The composition of the gas discharged from the apparatus was determined. The intensity of the process was determined on the basis of the hourly rate of growth and the amount of dry biomass produced per day per liter. On the basis of the data obtained, it was calculated that for an installation with a mass transfer of H_2 up to 25 ml/min per 1 g effective bio mass, the maximum efficiency (maximum production of biomass per day per liter) will result when the gas mixture contains 2-3% CO , 15-30% O_2 , 30-65% H_2 , depending on the biomass concentration. The maximum rate of growth obtained was 0.2/hr. With increasing biomass concentrations, the rate of growth decreased, while the efficiency of the process increased linearly. Although culturing was conducted under non-sterile conditions, contamination of the culture with extraneous species did not exceed 1% under optimum intensive growth conditions. The apparatus was run for 105 days with continuous periods of operation amounting to 11 days.

2/2

Aerospace Medicine

USSR

UDC 576.76:576.8

VOYTOVICH, Ya. V., PONOMAREV, P. M., TRUBACHEV, I. N., GITEL'ZON, I. I.,
and TERSKOV, I. A., ~~Institute of Biophysics~~, Institute of Biophysics, Siberian Department, Academy
of Sciences USSR, Krasnoyarsk

"Gas and Water Balance in a Regenerative Life-Support System Using
Hydrogen-Oxidizing Bacteria"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya
Biologicheskikh Nauk, No 10 (190), 1971, pp 11-19

Abstract: Hydrogen-oxidizing bacteria can perform 3 functions that warrant
their consideration as regenerative agents in a spacecraft life-support
system: (a) utilization of carbon dioxide exhaled by man, regeneration of
oxygen by electrolysis of water synthesized in the course of human and
bacterial oxidation, and liberation of hydrogen needed for the bacterial
life processes; (b) regeneration of water from human liquid wastes; (c)
regeneration of proteins in the cosmonaut's diet. This report summarizes
the results of a study of the growth, gas exchange, and biochemical compo-
sition of *Hydrogenomonas eutropha* grown in a continuous flow-type culture.
The data suggest that a life-support system can be based on the use of
chemosynthesis of H_2 bacteria and electrolysis.

1/1

USSR

UDC 622.233.051.7

BLINOV, G. A., and PONOMAREV, P. P., All-Union Scientific Research Institute of Methods and Techniques of Exploration

"New Diamond Bits for Drilling Crumbling Rocks"

Moscow, Razvedka i Okhrana Nedr, No 3, Mar 73, pp 32-35

Abstract: Acceptance testing of the single-layer diamond bit with a reinforced matrix AKU-1, designed for drilling poorly-abrasive and abrasive rock, showed the AKU-1 to loose half as much diamond while drilling as the bits of the OIA3 and OIA4 series. The AKU-1 could also take an axial load 20 to 25% larger. These results have been confirmed by experimental utilization in various geological institutes. The AKU-1 usually wears more evenly than the other bits, due to a more efficient diamond distribution.

1/1

USSR

UDC 534.2

PONOMAREV P. V.

"On the Propagation of Spherical Waves in Solids"

Uch. zap. Kursk. gos. ped. in-ta (Scientific Notes of Kursk State Pedagogical Institute), 1971, pp 57-77 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh474)

Translation: The problem of the propagation of spherical waves of compression and expansion of exponential shape is discussed. The waves originate from a spherical cavity where the pressure drops exponentially with time. It is shown that the parameters of the spherical waves are determined to a considerable degree by the increase in the hardness of the layers with an increase in the radius and also by their transverse compression occurring under displacement of the material. The damping of spherical waves is more intense than that of plane waves and this is explained by dissipative processes occurring under tangential deformations. High-frequency harmonics dampen spherical wave compressions more intensively during propagation. The total decrease in the energy of the compression-expansion wave is more rapid than an exponential law.
V. A. Ch.

1/1

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USSR

UDC 534-8

PONOMAREV, P. V., PONOMAREVA, K. S.

"Measuring the Coefficient of Ultrasonic Absorption in Rocks"

Uch. zap. Kursk. gos. ped. in-t (Scientific Notes of Kurskiy State Pedagogical Institute), 1970, Vol 71, pp 124-131 (from RZh-Fizika, No 12(II), Dec 70, Abstract No 12Zh785)

Translation: The reverberation method in which the time of the drop in sound intensity after switching off the energy source is determined is used to determine the absorption coefficient α . Rock samples of small size in which a diffuse field arose as a result of multiple reflections were used for the measurement. The equations for the propagation of diffuse or scattered sound are used to determine an expression for the energy density in a bounded rod, on one end of which the pulse of sound energy is emitted. The duration of the pulse determines the initial amplitude of the oscillations. It is shown that the reverberation time is independent of the scattering coefficient. The source of 5Kc ultrasonic pulses was the UZD-14 defectoscope. The signal is received with a

1/2

USSR

Vol 71, pp 124-131

quartz plate damped with cardboard and copper washers to exclude any transfer process in the plate itself. The signal was indicated with an oscillograph. The time for a decrease by half of the intensity is related to the absorption coefficient by the relationship:

$$t_{1/2} = \ln 2 / \alpha = 0.69 / \alpha = 1.38 / \alpha_p,$$

where α_p is the pressure absorption coefficient. After measurement, time and the rate of wave propagation the absorption coefficient α_p is determined. Experimental data are presented on measuring the absorption coefficient in different rocks; the spread was fairly large for the same rocks. This is explained by the phenomenon of fracturing of the rock, its reversal, and the method of preparing the rock samples. 6 references. V. A. Moor.

2/2

- 29 -

USSR

UDC: 629.7.036.3:533.697.4

KUDRYAVTSEVA, L. I., MEZHIROV, I. I., PONOMAREV, S. P., YAKUSHEVA, V. L.
"Experimental Study of Axisymmetrical Profiled Supersonic Nozzles with Low
Re Numbers"

Uch. Zap. Tsentr. Aerogidrodinam. In-ta [Scientific Writings of Central
Institute of Aerodynamics and Hydrodynamics], 1973, 4, No 3, pp 123-126
(Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli,
No 11, 1973, Abstract No 11.34.85, from the resume)

Translation: Results are presented from experimental study of the flow
into axisymmetrical profiled supersonic nozzles, designed considering the
influence of viscosity on the production of a flow with $M=6$ and various
design values of wall temperature. The Re_L number for both nozzles is
 $9.3 \cdot 10^3$, the thickness of extraction of the laminar boundary layer in the
output cross section of the nozzle is comparable to the radius of the isen-
tropic contour or even greater than it. It is shown that consideration of
the influence of the viscosity, consisting in addition of the thickness of
extraction of the boundary layer to the radius of the isentropic contour,
leads to satisfactory results: in spite of the small dimensions of the
nonviscous core, the M number in it, within the limits of the output charac-
teristic rhombus, is practically constant and equal to its design value.
6 Figures; 3 Biblio. Refs.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--oIMENTALATED, SILICON OR GERMANIUM, KETONES -U-
AUTHOR-(02)-PONOMAREV, S.V., LEBEDEV, S.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 939-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, KETONE, ORGANOGERMANIUM COMPOUND,
ORGANOLITHIUM COMPOUND, ORGANOSILICON COMPOUND, ISOMERIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3006/1426 STEP NO--UR/0079/70/040/004/0939/0940
CIRC ACCESSION NO--APC135100
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135100

ABSTRACT/EXTRACT--(U) CP-G-

ABSTRACT. (R SUB3 GE) SUB2 C:CO REACT EXOTHERMICALLY WITH BULI TO YIELD EVIDENTLY (R SUB3 GE) SUB2 C:CBUOLI, WHICH TREATED WITH ETOH GAVE (R SUB3 GE) SUB2 CHCOBU; R EQUALS ME, 37PERCENT, B SUB2 85DEGREES, N PRIME20 SUBD 1.4789, D PRIME20 1.1734; AND R EQUALS ET (CONTAMINATED WITH SOME 1,TRIETHYLGERMYL,2, TRIETHYLGERMYLOXY,1,HEXENE) 50PERCENT, B SUB1.5 135-7DEGREES, 1.4841, 1.0862. REDN. WITH LIALH SUB4 OF THE ABOVE KETONE GAVE 43PERCENT 1,1,BIS(TRIMETHYLGERMYL),2,HEXANOL, B SUB1.5 80DEGREES, 1.4562, 1.1628 SIMILARLY, (ME SUB3 SI) SUB2 C:CO AND BULI GAVE (ME SUB3 SI) SUB2 C:CBUOLI, WHICH WITH H SUB2 G GAVE 42PERCENT (ME SUB3 SI) SUB2 SUB3 86-7DEGREES, 1.4558, 0.8645, WHICH HEATED WITH HCl SUB2 ISOMERIZED TO 56PERCENT ME SUB3 SICH:CBUOSIME SUB3, B SUB3 58-60DEGREES, 1.4396, 0.8263. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 547.246-547.245

PONOMAREV, S.V., and LEBEDEV, S.A., Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Bimetallated (Si, Ge) Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 939-940

Abstract: Bis(trialkylgermyl)ketenes with self-heating interact with butyllithium (equimolecular quantities). Subsequent treatment of the resultant products with alcohol gives 1,1-bis(trialkylgermyl)-2-hexanones. The synthesis of 1,1-bis(triethylgermyl)-2-hexanone also gives a certain amount of its isomer 1-triethylgermyl-2-triethylgermoxo-2-hexene (O-isomer). The interaction of bis(trimethylsilyl)-ketene with butyllithium with subsequent decomposition of the reaction products with water gives 1,1-bis(trimethylsilyl)-2-hexanone. The resultant ketone is completely rearranged on heating over mercuric iodide into its isomer 1-trimethylsilyl-2-trimethylsiloxy-1-hexene. The reduction of 1,1-bis(trimethylgermyl)-2-hexanone with lithium aluminum hydride gives 1,1-bis(trimethylgermyl)-2-hexanol.

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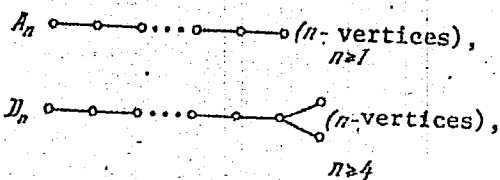
USSR

BERNSHTEYN, I. N., GEL'FAND, I. M., and PONOMAREV, V. A.

"Coxeter Functors and Gabriel's Theorem"

Moscow, Uspekhi Matematicheskikh Nauk, Vol 28, No 2, Mar-Apr 73, pp 19-33

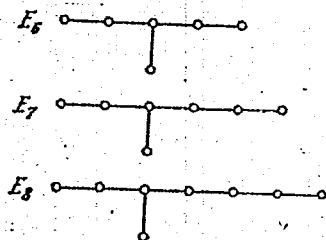
Abstract: P. GABRIEL posed and solved the following problem: finding all oriented graphs (Γ, Λ) for which there exists only a finite number of indecomposable objects $(V, f) \in \mathcal{L}(\Gamma, \Lambda)$ which are nonisomorphic among themselves. He reached the conclusion that, in order that there be a finite number of indecomposable objects in the category $\mathcal{L}(\Gamma, \Lambda)$, it is necessary and sufficient that the graph Γ coincide with one of the following graphs:



1/3

USSR

BERNSHTEYN, I. N., et al., Uspekhi Matematicheskikh Nauk, Vol 28, No 2, Mar-Apr 73, pp 19-33



(this fact does not depend on the orientation of Λ). What is surprising here is the fact that these graphs coincide exactly with DYNKIN's schemes for simple Lie groups. Also the indecomposable objects of the category $\mathcal{L}(\Gamma, \Lambda)$ naturally correspond to positive roots constructed according to DYNKIN's Γ scheme.

2/3

USSR

BERNSHTEYN, I. N., et al., Uspekhi Matematicheskikh Nauk, Vol 28, No 2, Mar-Apr 73, pp 19-33

The present article "attempts to a certain extent to remove the 'mysticism' from this correspondence." While GABRIEL establishes a posteriori the relation with DYNKIN's schemes and roots, the authors of the present article give a proof of GABRIEL's theorem based on the use of the technique of roots and Weil groups. So-called Coxeter functors play an important role in this proof. Some considerations regarding GABRIEL's problem which are similar to those used in the present article were recently stated by A. V. ROYTER.

3/3

USSR

UDC: 8.74

PONOMAREV, V. A.

"Coding of Quantities in Residues With Respect to a Single Modulus"

Probl. sistemotekhniki--sbornik (Problems of Systems Analysis--collection of works), vyp. 1, n.p., "Sudostroyeniye", 1972, pp 168-182 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V630 by A. Maslov)

Translation: The paper deals with the possibilities of economy in computer storage where instead of storing a sequence of numbers a_i , the sequence of remainders from division of these numbers by a given integer is stored. It is assumed that the system then has available approximate values \tilde{a}_i (which may be obtained from experiment).

1/1

- 48 -

Foundry

USSR

UDC 669.71.046.44

RAKHIMOV, A. R., MUKHYMBEKOVA, M. K., ISAKOV, U. I., and
PONOMAREV, V. D.

"Method of Processing Aluminosilicate Slags Obtained During Reduction Smelting of Lisakovskiy Concentrates"

Sb. materialov Vses. seminarov energetikov predpriyatiy tsvetn. metallurgii po ekon. elektroenergii (All-Union Seminar of Electrical Engineers of the Enterprises of Non-ferrous Metallurgy on the Question of Economizing on Electrical Power -- collection of transactions), Moscow, 1970, pp 20-28 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G98)

Translation: Aluminosilicate slags were smelted from fluxed pellets of magnesium lisakovskiy concentrate. Experiments of sintering the slags with soda were conducted and the optimal conditions of sintering were established. The conditions of decomposition of cakes and the effect of different factors were studied. Experiments were conducted involving combined processing of aluminosilicate slags with red slime using the autoclave method, and the feasibility of such a combination was shown.

1/1

Acc. Nr:

AR0055259

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

UR0000

115571r Nature of sodium silicotitanate formed in the sodium
oxide-silicon oxide-titanium oxide-water system. Medvedkov,
B. E.; Ni, L. P.; Kopylova, E. A.; Klyuchnikov, Yu. P.;
Bocharova, G. V.; Ponomarev, V. D. (USSR). *Tr. Inst. Met.*
Obogashch., Akad. Nauk SSSR 1969, 35, 26-42 (Russ).
From *Ref. Zh., Geol.*, V. 1970, Abstr. No. 1V787. Chem.,
crystalloptical, and x-ray structural analyses showed that $\text{Na}_2\text{O} \cdot$
 $\text{SiO}_2 \cdot \text{TiO}_2$ was formed in 2 crystallographic modifications de-
pending on the conditions of hydrothermal synthesis: tetragonal
(phase T) with lattice parameters $a = 8.37$ and $c = 10.20$ Å, and
orthorhombic (phase P) with $a = 8.648$, $b = 9.834$, and $c = 10.300$
Å. The ir spectra of both modifications are given. The phys-
chem. characteristics of both modifications were detd. together
with the nature of their thermal effects. The series of solid
solns. of replacement of Si by Ge in lattices of both modifications
were studied by using an ir spectroscopic method. MLSV

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19840487

USSR

UDC 548.736

ALIYEV, Z. G., ATOVMIAN, L. O., and PONOMAREV, V. I., Branch of the Institute of Chemical Physics, Academy of Sciences USSR

"Crystalline Structure of the Monohydrate of Pyrazine-1,3-dicarbonato-carbonyltriphenylphosphine Rhodium (I)"

Moscow, Zhurnal Strukturnoy Khimii, Vol 14, No 4, Jul/Aug 73, pp 748-749

Abstract: X-ray structural analysis of the crystalline $[\text{Rh}(\text{pyrazine-2,3-dicarboxylic acid})(\text{CO})\text{PPh}_3]$ showed it to be of monoclinic syngony: $a = 11.200 \pm 0.005$, $b = 27.87 \pm 0.01$, $c = 7.695 \pm 0.005 \text{ \AA}$, $\beta = 99.5 \pm 0.1^\circ$, $d = 1.63 \text{ g/cm}^3$, $Z = 4$. The structure of a crystal consists of discrete monomeric molecules and water. The pyrazine-2,3-dicarboxylic acid forms a flat five-membered ring with the metal atom. The Ph coordination is flat, quadratic, the carbonyl group being oriented trans to the oxygen atom of the organic acid.

1/1

- 7 -

USSR

UDC: 621.396.96:681.32

PONOMAREV, V. I.

"On the Problem of Measuring Doppler Frequency Shift With Regard to Quantum Effects"

Khar'kov, Radioelektron. letatel'n. apparatov--sbornik (Aerospace Electronics--collection of works), Khar'kov Aviation Institute, vyp. 4, 1972, pp 29-34 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12G11 [résumé])

Translation: The paper deals with the problem of measuring the Doppler frequency shift when taking account of the quantum structure of electromagnetic radiation. It is shown that measurement results will be discrete. The resultant equations define the operation of an optimum measuring device. The problem of measurement of the given parameter reduces to simulating (modeling) these equations. One illustration, bibliography of six titles.

1/1

USSR

UDC 629.78.015:532.526

ZUBTSOV, A. V. and PONOMAREV, V. I.

"Asymptotic Solution to the Problem of Viscous-Fluid Plane Flow Around a Fibrous Surface"

Uch. Zap. Tsentr. Aerogidrodinam. In-ta (Scientific Writings of the Central Aerohydrodynamics Institute), Vol 3, No 2, 1972, pp 39-50 (from Referativnyy Zhurnal--Raketostroyeniye, No 8, 1972, Abstract No 8.41.91)

Abstract: In the viscous-fluid flow around a wing at a Reynolds' number greater than 1 the flow in the boundary layer is, as a rule, turbulent. One of the methods of artificial laminarization of the flow is sucking the air from the boundary layer. In the technological preparation of a wing surface, a high-frequency undulation can form on it and, consequently, there is practical interest in investigating the effect of surface undulation on the flow of a fluid in the boundary layer. The flow around a profile, having an undulating contour, by the flow of a viscous incompressible fluid at a Reynolds' number greater than 1 can be investigated. The case where $b_0 \gg \lambda \gg \delta \gg h$ (b_0 -- length of profile chord, $2\pi\lambda$ -- wave length, h -- wave amplitude, and δ -- boundary layer thickness) is examined. Disturbing effects, caused by surface undulation, are determined from solving linearized Stokes-Navier equations. The solution of these equations was $1/2$

USSR

ZUBTSOV, A. V. and PONOMAREV, V. I., Uch. Zap. Tsentr. Aerogidrodinam. In-ta, Vol 3, No 2, 1972, pp 39-50 (from Referativnyy Zhurnal--Raketo-stroyeniye, No 8, 1972, Abstract No 8.41.91)

approximated by the method of external and internal asymptotic expansions for small parameters depending on the magnitude of $\lambda = \lambda/b_0$ and the Reynolds' number. The solution is used for evaluating the effect which shows the surface undulation on the stability of the plane boundary layer. Author's view, 5 tables, 3 bibliographical references.

2/2

- 21 -

S/019/62/000/002/068/082
A152/A126

AUTHOR: Ponomarev, V.I.

TITLE: A device for centerless-continuous grinding of cylindrical parts

PERIODICAL: Byulleten' izobreteniy, no. 2, 1962, 52

TEXT: Class 49a, 1302. No. 144360 (727204/25 of April 20, 1961). A device for centerless-continuous grinding of cylindrical parts, comprising a roller-type feeder and a carriage with a revolving cutter, differing from others in that in order to provide for machining workpieces of any length, it is fitted with two groups of rollers installed on both sides of the carriage at negligible distances from it, each group containing three rollers arranged around a circumference at angles of 120° in respect to each other.

Card 1/1

85267

S/C19/60/000/016/047/134

A152/A029

9.2550

AUTHORS: Ponomarev, V.I., Lukin, V.I.

TITLE: An Electromechanical Band Filter

PERIODICAL: Byulleten' izobreteniy, 1960, No. 16, pp. 29-30

TEXT: Class 21g, 34. No. 131004 (648130/26, December 22, 1959). 1. This electro-mechanical band filter has electromagnetic input and output converters and a tuning-fork vibrator, and is distinguished by the following special feature: in order to widen the limits of regulation of the width of the pass band by varying the dimensions of the cross connection between the prongs of the tuning fork, the latter are located in the gaps of the electromagnets of the converters in such a way that the variable magnetic field perpendicular to the tuning-fork plane excites bending vibrations perpendicular to the tuning-fork plane. 2. An electromechanical band filter as specified in the preceding point, distinguished by the following special feature: it has an additional input and output coupling effected by the mutual inductance of the converter windings.

Card 1/1

19.5200

67226

25(2)

SOV/19-59-13-185/265

AUTHOR: Ponomarev, V.I.

TITLE: A Device for High-Speed Cutting of Metals

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 13, p 49 (USSR)

ABSTRACT: Class 49a, 33₀₁. Nr 121007 (601407/25 of 9 Jun 58).

1) A device including in itself a cutter fixed in a holder mounted on the carriage, and an exhaust chute for cuttings. To raise the productivity and protect the cutter from cuttings, the cutter's front angle is between 33-45° and the radius of its round top is from 0.6 - 1.5mm; the exhaust chute for cuttings is conical, widening up toward the outlet. 2) A variant of 1, where spiral cuttings are picked up by a wire arch conveying them to a receptacle. The wire arch is mounted in an inclined position on the machine carriage, perpendicular to the machine axis. ✓

Card 1/1

PONOMAREV V.I.

AUTHOR: Ponomarev, V.I.

SOV-19-58-2-99/551

TITLE: An Electromechanical Band Filter (Elektromekhanicheskiy polosovoy fil'tr)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 2, p 25 (USSR)

ABSTRACT: An electromechanical band filter (Registration of Inventions, Class 21a¹, 904. Nr 110847) with symmetrical electromagnetic excitation of a bar vibrator. To simplify the design and obtain better uniformity of attenuation within the filter pass band, the vibrator is made unbalanced and is attached to the base by an elastic bond in the form of a rectangular protrusion which forms, together with the vibrator, a mobile part, the dimensions of which are chosen in accordance with the necessary width of the filter pass band.

Band-pass filters--Design

Card 1/1

USSR

ZUBTSOV, A. V., PONOMAREV, V. I.

"Asymptotic Solution of the Problem of Flow Around a Wavy Surface by a Flat Stream of a Viscous Fluid"

Uch. zap. Tsentr. Aero-gidrodinam. In-ta. [Scientific Writings of Central Aerohydrodynamics Institute], 1972, Vol 3, No 2, pp 39-50, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B677, from the Resume).

Translation: Flow around a profile with a wavy contour by a stream of a viscous, incompressible fluid with $R \gg 1$ is studied. The case is studied when $b_0 \gg \lambda \gg \delta \gg h$ (b_0 is the length of a profile chord, $2\pi\lambda$ is the wavelength, h is the amplitude of the wave, δ is the thickness of the boundary layer). The perturbations caused by the waviness of the surface are determined by solving linearized Navier-Stokes equations. The solution of these equations is found approximately by the method of external and internal asymptotic expansions with respect to small parameters, dependent on the value of $\lambda = \lambda/b_0$ and the Reynolds number. The solution found is used to estimate the influence of surface waviness on the stability of a flat boundary layer.

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USSR

UDC 612.216.2+612.22+612.275

KEBALO, V. I., and ~~PONOMAREV, V. P.~~, Institute of Physical Culture imeni P. F. Lesgaft, Leningrad

"Lung Ventilation and Gas Exchange in Man Breathing Different Gaseous Mixtures While Swimming Under Water"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 12, 1971, pp 1,802-1,807

Abstract: Gas Exchange was studied in 8 experienced aqualungists who swam 500 m at top speed about 2 m below the water surface, breathing either compressed air, an argon-oxygen mixture, or 2 helium-oxygen mixture. The values of the minute volume, oxygen consumption, and carbon dioxide release were highest when the helium-oxygen mixture was used. At the time of greatest exertion, the pressure of the gas flow at inspiration and expiration was highest when the argon-oxygen mixture was used; oxygen consumption and carbon dioxide release were slightly below the maximum level while the minute volume was the lowest. The denser the gaseous mixture, the greater the resistance to respiration. Hence, the subjects swam fastest when breathing helium and oxygen.

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USSR

PONOMAREV, V. S.

"Operation Modulus Testing in Specialized Computers"

Kibernet. i Vychisl. Tekhn. Resp. Mezhd. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1972, No 18, pp 85-89 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V619, by the author).

Translation: It is reported that from the standpoint of testing of the modulus of arithmetic operations, a reverse code has no significant advantage over a complement code. Refinement of the concept of the initial number in modulus testing allows a significant increase in the number of versions of numerical testing in comparison with those studied in the literature.

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USSR

Amplifiers

UDC: 621.382.323:6 21.375.421

PONOMAREV, V. S. and ZHUKOVSKIY, A. N.

"Using Field-Effect Transistors in Spectrometric Amplifiers"

Moscow, Pribery i Tekhnika Eksperimenta, No. 3, 1971, pp 111-114

Abstract: The purpose of this paper is to generalize the results obtained in the research into the application of Soviet field-effect transistors in low-noise spectrometric amplifiers. This research involved transistor characteristics in the 77-300° K temperature range. The transistors tested were of the TN-1, TN-5D, and KP101G, using p-n junctions and p-type channels; also tested were triodes developed specially for spectrometric low-noise amplifiers, with n-type channels and p-n junctions. Finally, the TN-12, an MOS device with n-type channel, was tested. Curves are given of the parameters of these components and of the gate current of the transistors as a function of the temperature. Two tables of the components' characteristics, and the circuit of a preamplifier used to check the resolving power of amplifiers using the components are presented. The authors, members of the Special Design Office for X-Ray Equipment, Leningrad, thank A. A. Mitin for his assistance.

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Acc. Nr: **AP0044593**

Ref. Code: **URO497**

PRIMARY SOURCE: **Klinicheskaya Meditsina**, 1970, Vol 48,
Nr / , PP **17-21**

**THE PRIMARY RESULTS OF CONTINUOUS (ANNUAL) BICILLIN-ASPIRIN
PROPHYLAXIS OF RHEUMATISM RELAPSES IN ADULTS**

**I. N. Mikhajlova, M. A. Monakhova, T. A. Tarasenkova,
N. V. Nikolskaya, V. S. Ponomarev**

Summary

The authors commit to paper the results of continuous 2 1/2-year-long bicillin-aspirin prophylaxis of rheumatism relapses in 180 patients who have sustained the active stage of the process. The patients were subject to intramuscular injections of the new Soviet-made antibiotic bicillin in a dose of 1,500,000 Units (110 cases) or of the Czechoslovakian antibiotic pendepon in a dose of 1,00,000 Units (70 cases) once every four weeks. In spring and autumn the patients were given per os 2 gm of aspirin daily for a period of one month. In regular prophylaxis the number of rheumatism relapses decreased by 10 times, with a sharp reduction of the incidence of tonsillitis, influenza and upper respiratory catarrh. There was noted a normalization of the astreptolysin-O titer and a significant decline of laboratory indices of the rheumatic process activity in patients affected with a continuous-recurrent form of the disease.

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Pathology

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UDC 616.002.77-07:616.281+616.287-008.1

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PONOMAREV, V. S., and SIDORCHUK, T. V., Candidates of Medical Sciences,
Otorhinolaryngology Section, Moscow City Hospital No 70

"The State of Auditory and Vestibular Analysors in Rheumatic Fever Patients"

Kiev, Zhurnal Ushnykh Nosovykh i Gorlovykh Bolezney, No 1, Jan/Feb
70, pp 36-41

Abstract: A study was made of the types and frequency of auditory and vestibular disorders in 170 14-51 year old rheumatic fever patients. Functional investigation of the auditory and vestibular analysors was conducted by analysis of the complaints and examination of ear, nose and throat. The functional state of the auditory analy-sor was investigated by whispering and conversational speech, tuning forks, a tone threshold audiometry method, and by determination of the differential threshold of sound intensity change. The state of the vestibular analyzor was determined from study of spontaneous vestibular symptoms (nystagmus, deviation of hands, static, coordina-tion and gait disorders, determination of optokinetic nystagmus,
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USSR

PONOMAREV, V. S., et al., Kiev, Zhurnal Ushnykh Nosovykh i Gorlovykh Bolezney, No 1, Jan/Feb 70, pp 36-41

and experimental investigation of the vestibular analysor by caloric and rotatory tests.

Analysis of the results revealed that auditory disorders in rheumatic fever patients were rather frequent (27.1%). They were detected only by tone threshold audiometry and tuning fork investigation in practically normal speech perception. Vestibular disorders (primarily, decrease of vestibular response to caloric stimulation, less frequently -- increase of response nystagmus asymmetry and others) were detected by experimental investigation of the vestibular analysor in most of the rheumatic fever patients (83.5%). Spontaneous vestibular symptoms (Mainly, spontaneous deviation of the hands) were observed less frequently (21.8%). Auditory and vestibular disorders in rheumatic fever patients were probably associated with the basic process and were observed in any degree of activity and with any form of illness, in different types of vitium cordis and different degrees of blood circulation insufficiency, regardless of the remoteness of the illness, age of the patient or treatment method. These

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PONOMAREV, V. S., et al., Kiev, Zhurnal Ushnykh Nosovykh i Gorlovykh Bolezney, No 1, Jan/Feb 70, pp 36-41

disorders were determined to be of centralnervous system origin. The conjunction of these disorders with neurological symptoms made possible a tonic diagnosis of rheumatic lesions of the central nervous system in 51 patients (31.8%).

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USSR

UDC 547.245'118.07

KAMENSKIY, A. B., OGAYDZHAN, E. P., PONOMAREV, V. V., GOLUBTSOB, S. A.,
and IGNATOVICH, YU. A.

"A Method of Making Organyl Halosilyl Phosphines"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 22, Aug 72, Author's Certificate No 345167, Div C, filed 31 Jul 70,
published 14 Jul 72, p 97

Translation: This Author's Certificate introduces a method of making organyl
halyl phosphines by reacting hydrogen-containing halosilanes with chloro-
phosphines in an organic solvent with subsequent isolation of the goal
product by conventional methods. As a distinguishing feature of the patent,
the process is simplified by using organyl chlorophosphines as the chloro-
phosphines, and carrying out the process in the presence of a hydrogen
chloride acceptor such as triethylamine.

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USSR

UDC 678.84

KAMENSKIY, A. B., OGAYDZHAN, E. P., ~~PONOMAREV, V. V.~~, and GOLUBTSOV, S. A.

"A Method of Synthesizing Organophosphorus Compounds"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 36, 1971, Author's Certificate No 322346, Division C, filed 31 Jul 70, published 30 Nov 71, p 55

Translation: This Author's Certificate introduces: 1. A method of synthesizing organophosphorus compounds by interacting trichlorosilane with organophosphines. As a distinguishing feature of the patent, compounds containing the P-P bond in the main chain are synthesized by using organyl-dichlorophosphines as the organophosphines, and carrying out the reaction in the presence of a tertiary amine in an organic solvent. 2. A modification of this method distinguished by the fact that the tertiary amine is taken in quantities from catalytic to equimolecular.

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USSR

UDC 547.558.1

CHERNYSHEV, YE. A., AKSENOV, V. I., PONOMAREV, V. V., GOLUBTSOV, S. A., BUGER-ENKO, YE. F.

"Organophosphorus Heterocyclic Compounds. III. Synthesis and Conversions of 10-chloro-10-phospha-9-oxa-9,10-dihydrophenanthrene"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 93-96

Abstract: The method of intramolecular ring formation was used on o-xenyloxy-dichlorophosphine in the liquid phase in the presence of $AlCl_3$ to obtain 10-chloro-10-phospha-9-oxa-9,10-dihydrophenanthrene. The chemical conversions of 10-chloro-10-phospha-9-oxa-9,10-dihydrophenanthrene take place both with conservation of the tricyclic structure (hydrolysis, addition of sulfur, methoxylation) and with splitting of the ring containing the P-O bond (Grignard methylation). Some physical characteristics, the percentage yield and formulas are tabulated and the experimental procedures for synthesis are presented for the mentioned compounds.

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